ABSTRACT

A method for combusting fuel in an engine involving decreasing a first volume of gas to a second volume, in two stages, while increasing the pressure and temperature of that volume of gas (a compression process having a chosen compression ratio), then increasing the second volume to a third volume at constant pressure while adding heat until a predetermined temperature is obtained, increasing the third volume of gas to a fourth volume, in two stages while decreasing the pressure at the predetermined temperature (an expansion process having a chosen expansion ratio much greater than the compression ratio), decreasing the pressure to atmospheric pressure while removing heat under constant volume, and finally decreasing the volume of gas to the first volume while removing heat under constant pressure to complete an over expanded, limited-temperature cycle. Also disclosed is an engine employing said over expanded, limited-temperature cycle.

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